

PRESENTING PICTURES

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**science
museum**

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Artefacts series: studies in the history of science and technology

In growing numbers, historians are using technological artefacts in the study and interpretation of the recent past. Their work is still largely pioneering, as they investigate approaches and modes of presentation. But the consequences are already richly rewarding. To encourage this enterprise, three of the world's greatest repositories of the material heritage of science and technology: the Deutsches Museum, the Science Museum and the Smithsonian Institution, are collaborating on this book series. Each volume treats a particular subject area, using objects to explore a wide range of issues related to science, technology and medicine and their place in society.

Edited by Robert Bud, Science Museum, London
Bernard Finn, Smithsonian Institution, Washington DC
Helmuth Trischler, Deutsches Museum, Munich

Volume 1 Manifesting Medicine: Bodies and Machines

Principal Editor Robert Bud

Volume 2 Exposing Electronics

Principal Editor Bernard Finn

Volume 3 Tackling Transport

Principal Editors Helmuth Trischler and Stefan Zeilinger

Volume 4 Presenting Pictures

Principal Editor Bernard Finn

Further volumes in preparation, on the themes of:

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Notes on contributors

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Jonathan Coopersmith is an Associate Professor of History at Texas A&M University, and has taught the history of technology and European history since 1988. He has written a history of the fax machine, from its origins in the 1840s through to its absorption into the computerised office in the 1990s, and has begun work on a history of communication technologies and pornography.

Bernard Finn has been curator of the electrical collections at the Smithsonian Institution's National Museum of American History since 1962. He has been responsible for some two dozen exhibitions at the NMAH, most dealing with electric communications or electric power.

Steven F Joseph is an independent scholar and European Union official based in Brussels. He researches and publishes on the subject of early photography in Belgium, and on photography applied to book illustration in the nineteenth century.

Cornelia Kemp studied art history, history and folklore at the universities of Tübingen and Munich. Her previous curatorial activities have encompassed the fields of art history, German literature studies and cultural studies. Since 1990 she has been Curator of Photography and Film at the Deutsches Museum, where she has produced various exhibitions on technical imaging.

John Liffen is Curator of Communications at the Science Museum, London. He was also a researcher and writer for the on-line version of the Museum's *Making the Modern World* gallery. His current research interests include the history of the telephone prior to Bell and documentary sources for the history of early railways.

Russell Roberts is Curator of Photographs at the National Museum of Photography, Film & Television in Bradford. His curatorial work includes the 2000 exhibition *Specimens and Marvels: The Work of William Henry Fox Talbot*.

Larry J Schaaf, an independent historian based in Baltimore, Maryland, is Director of the Correspondence of William Henry Fox Talbot Project at the Glasgow University and a Visiting Professor. He specialises in the prehistory and early history of photography, especially at the juncture of art and science, and is the author of numerous books on Talbot and others.

John Ward is the former Curator of Photography and Cinematography at the Science Museum, London and is currently one of its Senior Research Fellows. His main interests are nineteenth-century photography and early cinematography.

Helena E Wright has been Curator of Graphic Arts at the Smithsonian's National Museum of American History since 1983, and has worked with museum image collections for more than 35 years. Her research and publications centre on prints, photographs and other pictorial media, and the reception of graphic work in the construction of a larger visual culture. Her exhibitions have covered such topics as American papermaking, print collecting, collotype printing and women graphic artists.

Series preface

With the rise of formal academic programmes in the history of science and technology over the last half century, the hope was occasionally expressed that these new scholars, as they developed new traditions, would turn to artefacts, carefully preserved in both public and private museums, as fodder for their research appetites. With some notable exceptions, this has not proven to be the case. Even those scholars who entered museums as curators have produced only a modest number of publications where historical conclusions depend on analysis of the collections.

The situation has been aggravated in recent years as museums have changed. Some have responded to calls for improvement in science education, turning themselves wholly or partly into science/technology 'centres'. Others have responded to trends in the academic community, developing exhibits that place science and technology in broader social contexts. In the former case, if they are used at all, objects appear as symbols or icons. In the latter case the pressure to develop social-history approaches has too frequently meant that museum curators look to the academy not only for theoretical structures but also for suggestions on where to find supporting evidence, and objects end up as illustrations for the text rather than as fundamental sources.

It was in this environment that the first 'Artefacts' conference took place in 1996. Representatives from the Science Museum, the Deutsches Museum and the Smithsonian met with colleagues from other museums and from academia. We hoped that through formal presentations and through discussion we might begin to develop models for how objects can be used effectively in historical studies. The results would appear in book-length publications (stimulated by the meetings, but not formulated as 'proceedings') of which this is the fourth. Each meeting, and each volume, would focus on a particular topic. With such an approach comes the implication that the ways in which objects are employed in historical studies may vary with the science or technology being treated. It is too early to draw any conclusions regarding this hypothesis, but it is an idea we may want to return to in the future.

Each volume also contains a section treating museums that feature the subject being considered. We thereby indicate the wealth of material that has been preserved in collections, and the extent to which it is being used for various levels of interpretation in exhibits.

Introduction

In this fourth volume of the Artefacts series we direct our attention to images. We are concerned with pictures as objects, and with the technical devices associated with the production and communication of pictures. In both cases we are especially interested in showing how the object itself can convey information of value to historians. I might add that we do not include paintings, for which there is an entirely different literature largely dealing with different sets of questions.

We begin appropriately with William Henry Fox Talbot and the origins of photography. As Russell Roberts points out, Talbot and others were surprisingly prescient regarding the possibilities of this new technology. In particular, they speculated about the impact that photography, in combination with printing, would have on museums (not unlike recent ruminations about the impact of digital images and the Internet). Roberts pursues his analysis with specific references to Talbot photographs.

Talbot's *The Pencil of Nature* was the first book to be printed with photographs. Starting at this point, Helena Wright describes the revolution in printing technology and in publication that took place over the course of the rest of the nineteenth century as increasingly successful means of reproducing photographs were achieved. She pays special attention to the collotype and then the screened halftone processes.

Cornelia Kemp examines apparatus preserved at the Deutsches Museum, together with some recently discovered photographs, to gain an understanding of the work of Ernst Kohlrausch. A little-known contemporary of Eadweard Muybridge and Etienne-Jules Marey, Kohlrausch developed his own system of 'chronophotography' whereby a rapid sequence of photographs could reveal details of a body in motion, a motivation stimulated by his interest in gymnastics. The artefactual evidence is all the more important because this approach was not considered significant by others, and the written record is sparse.

Mechanical means of conveying information, including images, continued and continue to be important – witness the numerous specialised mail services in use today. John Liffen describes the ingenious mail-tube systems that proliferated in urban settings in various parts of the world in the latter half of the nineteenth century.

Early in the twentieth century several people began to explore means of producing and conveying images electronically. One who has not received much attention is Manfred von Ardenne, who, like Kohlrausch, is rescued from obscurity by the happy circumstance that some of his apparatus has been preserved at the Deutsches Museum.

In examining and interpreting this material, Oskar Blumtritt makes a powerful argument for the value of artefacts in studies of the history of technology, with particular reference to the ideas of Bruno Latour.

Some readers may be surprised to learn that the history of the fax machine can be traced back to the 1840s, at a time when Daguerre and Talbot were performing their early photographic experiments. However, as Jonathan Coopersmith shows us, it wasn't until the 1920s that practical methods were devised so that images could be copied and then conveyed – either by wire or through the ether – over long distances. And it was half a century later before new techniques made this device a ubiquitous home and office machine, with all the consequences that flowed from the ease (and cheapness) with which it could be used.

Where are the artefacts – machines and images – that have stimulated these stories and given them substance? How much more is available, and how does a historian find it? In the closing section of this volume Larry Schaaf makes it clear that survival is a chancy thing. In the particular case of William Henry Fox Talbot the gods have been kind; an enormous body of material – images and apparatus – has survived. Some is still in private hands, but the bulk is available in museums, and he assures us that a great deal is still to be learned from its examination.

John Ward describes a twentieth-century collection of industrial photographs by Walter Nurnberg, now part of the collection of the National Museum of Photography, Film & Television, Bradford. He is careful to point out that these images, like other objects, do not automatically speak for themselves. To interpret them the historian must take into account a variety of contextual considerations. But when this is done the rewards can be rich indeed.

The stimulus for this volume came from a meeting at the Musée des Techniques of the Conservatoire National des Arts et Métiers in Paris in November 1999, as it was about to be reopened. This is, of course, one of the great museums of the history of technology, and those of us in attendance were delighted to have the opportunity to see it being reborn. Of particular interest was the section on photography, and here Steven Joseph takes us on a tour, describing some of the richness of the collections and the ways in which they are interpreted.

Digital techniques and the medium of the Internet have begun to make museum collections available in ways that even Talbot could not have imagined. It is my view that the consequences will be even greater than he thought they would be for photography. But instead of making museums and their collections irrelevant, the result will be to make them even more valuable, since they will be accessible. All of us will be in a better position to know what to look for in the real thing and to appreciate it when we see it.

Finally, Helena Wright provides us with a world survey of museums of printing and photography, many of which can be visited via the Internet from the comfort of our offices or homes.